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ABSTRACT

The Pennsylvania Department of Education has developed enrollment projections to 1995 based on the number of births occurring 20 years earlier. The statewide totals are then used as a starting point for projections for each segment of the higher education community: state owned institutions, community colleges, state related institutions, independent institutions, and proprietary institutions. The trends identified and the goals projected were (1) bringing racial and ethnic minority enrollments to parity with majority enrollments, and (2) increasing the female enrollments to the level of male enrollments. Another significant trend is considered in the increase in graduate and first professional enrollments. The trend projections also consider the impact of lowered tuition and fees on the base projection. The available data on adult continuing education is also projected. (JMF)

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Pennsylvania Higher Education Enrollment Planning Projections

Phase II Report

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NE 008 321

Prepared for
Office of Higher Education
Council of Higher Education
State Board of Education

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PENNSYLVANIA DEPARTMENT OF EDUCATION
OFFICE OF HIGHER EDUCATION
BUREAU OF PLANNING
OCTOBER 1975

PHASE II
ENROLLMENT PROJECTIONS

Introduction

At the request of the State Board of Education, the Department of Education prepared in 1974 a report on projected higher education enrollments to 1990. The report, Pennsylvania Higher Education Enrollment Planning Projections - Phase I Report, described a methodology that relates the present number of higher education enrollments to the number of births occurring 20 years earlier. In practice, a four-year span of births was used as a base from which the enrollments were projected for each of four target years: 1975, 1980, 1985 and 1990. Since the Phase I Report, additional birth data have enabled the committee to extend the projections to the year 1995. The Phase I Report showed only systemwide totals and did not attempt to distribute the enrollments among the higher education segments.

The 20-year projection developed from the procedure was then used as a starting point for projections of trends, tempered by judgment and goal identification. The trends identified and the goals projected were (1) bringing racial and ethnic minority enrollments to parity with majority enrollments, and (2) increasing female enrollments to the level of male enrollments.

Another significant trend in higher education has been the increase in graduate and first professional enrollments. The committee believed this enrollment trend is strong enough to add 50 per cent by 1990.

A final question examined by the committee was to project any impact that lowered tuition and fees would have on the base projection. In this latter effort, two studies and three states were used in the development of an appropriate rationale and data source.

At the conclusion of an oral report to the State Board of Education's Council of Higher Education, the request was made that the committee continue its work and develop a rationale and method for dividing the enrollments among the segments. Also the committee was asked to review the available data on adult/continuing education and to project its impact on higher education enrollments.

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OCTOBER 1975

PHASE II
ENROLLMENT PROJECTIONS

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A final question examined by the committee was to project any impact that lowered tuition and fees would have on the base projection. In this latter effort, two studies and three states were used in the development of an appropriate rationale and data source.

At the conclusion of an oral report to the State Board of Education's Council of Higher Education, the request was made that the committee continue its work and develop a rationale and method for dividing the enrollments among the segments. Also the committee was asked to review the available data on adult/continuing education and to project its impact on higher education enrollments.

Developing a Rationale

In creating its rationale for a segmental distribution of the system's enrollments, the committee attempted to identify "significant trend factors" that lead to segmental differences. To qualify as a "significant trend factor," the factor had to be of such magnitude as to be readily apparent to a casual observer and of sufficient strength to substantially affect enrollments. Two such factors were identified: (1) the community college movement and (2) tuition differential.

In Pennsylvania it is abundantly apparent that the most pronounced enrollment increase in the last decade was in community colleges. While much of the increase can be ascribed to the sheer number of new community colleges coming on line, other aspects, such as program relevance and community acceptance, are equally important.

While developing its Phase I Report, the committee was also impressed with the results of the national and Wisconsin studies that were able to quantify the correlation between cost and enrollment. Both burgeoning community college enrollments and the growing disparity of costs in the public and private institutions formed the basis for a segmental analysis and distribution of enrollment numbers.

Community Colleges

While the community college segment has greatly increased its enrollment, a listing of individual community colleges shows that some institutions have been more successful in attracting students than others. A comparison of the enrollments at each college and the total population of their sponsoring districts shows a wide discrepancy in attracting power. Location, comprehensive programs, date of founding, societal and educational community acceptance were judged by the committee to be important factors establishing the percentage range: .33 per cent to 1.04 per cent of the total population of the sponsoring districts. The latter percentage can be considered as an index of the institution's student "attracting power."

The consensus of the committee was that these five criteria were uniquely applicable to community colleges. The committee also felt that it was reasonable to establish the upper limits of anticipated growth based on the concept of "attracting power" as a measure of assessment without regard for any added factor such as the growing tuition disparity. Four institutions having above average student/population ratios were judged to have made sufficient strides to be used as measuring sticks: Bucks and Montgomery County Community Colleges, Harrisburg Area Community College and Butler County Community College. Collectively, these four attract .75 per cent of their sponsoring districts' populations. Individually, the "attracting power" of the four community colleges ranges from .62 to 1.04 per cent.

The average enrollment performance of these four institutions was then compared to other community colleges. Some other community colleges have already attained or exceeded this average level, others have not. The committee assumed it reasonable to expect the average of all community colleges to reach similar student/population ratios in the future. If such levels had been attained for 1974-75 school year, 17,195 additional

full-time equivalent (FTE) students would have had to be added to the 41,329 already enrolled in the segment. This number would increase the community colleges' share of enrollments from 11.4 per cent to 16.1 per cent. Since this percentage increase was judged to be reasonable by 1990, a proportionate share was added in equally spaced increments to the base projection to 1990; other segments were reduced pro rata.

This pro rata distribution is open to question. Some emerging evidence indicates that a large number of students being attracted to the community colleges would have normally matriculated to the state colleges. If this is correct, an additional segmental adjustment will have to be made. The committee, however, considers this step to be one of "fine tuning."

Tuition Differential

Once the need for educational services at some level is established, it is generally accepted that tuition differential plays an important role in final student choice. The results of the national study, Financing Postsecondary Education in the United States, December 1973, show that for every $100 change in tuition, a change of one to three per cent can be expected in enrollment levels. Another study in Wisconsin by Jacob Stampen reported similar findings but indicated that the rate of change was much larger: 4.8 to 12.2 per cent for each $100 change in tuition levels.

An analysis of the two studies provided the rationale for assessing the relative student "attracting power" between public and independent institutions of higher education. The committee reasoned that at any time, with all other variables being held constant, any additional tuition spread between the public and private institutions would shift enrollments in favor of the lower tuition. In addition, the size of the shift would not likely be smaller than the one per cent reported in the national study, nor greater than the 12.2 per cent reported in the Wisconsin study.

In applying the method to a five-year history of Pennsylvania tuition differential, the committee used the two per cent average of the more conservative national study in projecting enrollment levels. An analysis of Pennsylvania's five-year data shows that the dollar spread between the public and independent institutions increased at an average of $34 per year. This increase was then applied to the anticipated enrollment adjustment rate of two per cent for every $100 difference in cost. Over the 20-year projection period, the differential amounts to about 14 per cent. The independent student loss was added to the public segments pro rata.

Adult/Continuing Education

The State Board of Education charged the committee with the responsibility of determining and projecting the impact of adult/continuing education registrations in higher education. This charge was especially difficult for the committee to carry out because of the almost total lack of definitive information. One of the most pervasive stumbling blocks is defining what is to be included in "continuing education." Also, there

is no way to compare the quality of offerings, which range from conferences and seminars to postdoctoral work in nuclear physics. Under such circumstances, registrations could not be added. Obviously, the subject, quality and the intensity of student experiences are important and must be considered in any assessment of adult/continuing education.

Historically, Pennsylvania adult/continuing education registrations have been placed under such conventional headings as Undergraduate Degree Credit, Non-Degree Credit and Conferences, Institutes and Workshops. This attempt at differentiation follows the lead of the U.S. Office of Education, which used similar tools to describe registrations in its periodic national surveys of the adult/continuing education market. After much deliberation, the committee agreed that the most critical evaluative characteristic of the adult/continuing education market was the awarding or the nonawarding of credit. The committee, therefore, decided not to follow the traditional practice of excluding adult/continuing education enrollments from conventional enrollments. Rather, it opted to include all adult/continuing education activities under two exclusive headings: Credit or Noncredit.

A computer printout of the 1972 survey of adult/continuing education by the Office of Higher Education gave the committee data that could be used to estimate the number of credit and noncredit registrations. The results of a similar 1969 study were also used in conjunction with the 1972 survey to tentatively project adult/continuing education enrollments to target years.

Appendix A shows the results of this work. The table entitled "Projected Higher Education Enrollments (Thousands)" is not complete and should be accepted only as a first approximation. Four target years of enrollments are shown. Also with the data divided into discrete units, this format has the advantage of being computerized and balanced to reflect any altered dimension or goals that the council might wish to add. The use of discrete units was originally suggested by the committee's two consultants, Hector Correa of the University of Pittsburgh and Shannon Stokes of the Pennsylvania State University.

Unfortunately, not all of the adult/continuing education data needed to prime the model are as definitive as the committee would like. The committee, therefore, is continuing to explore this area so that the best available data (coupled with any necessary assumptions) are used as source material. Also, a segmental distribution of enrollments will need to be made. One possible format for a segmental distribution is suggested in Appendix B. All of the original categories are retained with the addition of the segments heading the vertical axis.

The horizontal axis of the model in both appendices will include the committee's continuing work toward developing participation rates for each age category and the use of those rates as a multiplication factor for projecting age differentiated enrollments to any desired target year. Age differentials should tend to increase the total enrollments shown in the projections. An approximation of these figures is shown in Appendix A. Hopefully, Phase III will provide the Office of Higher Education with a computer model that will permit enrollment projections to be made as fast as any tabled change is reported.

Segmental Distribution

The six tables on the following pages show the distribution of the previously reported Phase I enrollments by segment to 1995. All of the tables assume (1) a lowered birth rate, (2) community college enrollment parity and (3) a growing tuition differential between public and private institutions. The first two tables of Series B also show the segmental effect on the base "Series A" projection of bringing women and minorities up to enrollment parity. Series B, Table III shows the segmental effect of increasing graduate amd first professional enrollments by 50 per cent. Series B, Table IV is a composite table summarizing the effects of the preceding three tables. Finally, Series C shows the segmental effect of a systemwide pro rata tuition reduction. The tuition disparity between the public and independent institutions is expected to continue. In this projection, the tuition is reduced to the average tuition charged by the states of Illinois, Michigan and Wisconsin.

James R. Spang, Chairman
Postsecondary Enrollment
Projection Committee
October 1975
Harrisburg

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SERIES A
Assumptions and Projections

PENNSYLVANIA DEPARTMENT OF EDUCATION
OFFICE OF HIGHER EDUCATION
BUREAU OF PLANNING
OCTOBER 1975

PENNSYLVANIA HIGHER EDUCATION

PLANNING PROJECTION ASSUMPTIONS FOR
TOTAL FALL FULL-TIME EQUIVALENT ENROLLMENTS

SERIES A - BASE PROJECTION

SYSTEM ASSUMPTIONS*

1. THAT THE NUMBER OF BIRTHS IS THE SINGLE MOST IMPORTANT FACTOR IN PREDICTING FUTURE ENROLLMENTS AT THE INSTITUTIONS OF HIGHER EDUCATION.

2. THAT THE PARTICIPATION RATE OF HIGH SCHOOL GRADUATES WILL NOT CHANGE.

3. THAT NO SIGNIFICANT NUMBER OF ADDITIONAL STUDENTS IN THE NON-TRADITIONAL AGE GROUP WILL SEEK ADMISSION TO COLLEGE.

4. THAT THE IN-MIGRATION OF STUDENTS WILL APPROXIMATE THE OUT-MIGRATION.

5. THAT THE TOTAL COMMONWEALTH POPULATION WILL REMAIN RELATIVELY CONSTANT.

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SEGMENTAL ASSUMPTIONS*

1. THAT COMMUNITY COLLEGE ENROLLMENTS WILL CONTINUE TO THE COMMITTEE ESTABLISHED MEASURE OF PARITY.

2. THAT SEGMENTAL DISTRIBUTION IS LARGELY A FUNCTION OF COST.

3. THAT THE HISTORICAL TUITION FEE DISPARITY BETWEEN THE PUBLIC AND INDEPENDENT INSTITUTIONS WILL CONTINUE AT CURRENT LEVELS.

*THESE ASSUMPTIONS ARE NOT SUBMITTED AS POLICY BUT FOR PLANNING PROJECTIONS.

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SERIES A - BASE PROJECTION

Pennsylvania statistics show a decrease in the number of live births from a high of 254,997 in 1957 to 153,272 in 1973. This is a drop of 101,725 or 39.8 per cent. Likewise, public and nonpublic high school graduates in Pennsylvania are expected to peak at 193,400 in 1975.

Table I and the graphic schematic following show the effect of the declining birth rate on FTE enrollments. Also shown are the segmental distribution of community college enrollment parity and the effect of the growing tuition differential between public and private institutions. This projection shows an overall increase in FTE enrollments to 366,000 in 1980 and a subsequent fall to 219,000 in 1995. This is a decrease of 144,450 (39.5 per cent) from 1974 enrollment levels and a drop of 147,000 (40.1 per cent) from the peak enrollment projected for 1980.

Other states see similar declines. Stephen P. Dresch in the May/June 1975 issue of the Journal of Higher Education and the June 1975 Journal of Political Economy writes that enrollment will probably stabilize from now to 1980, followed by a considerable (possibly 33 per cent) decline in the '80s and '90s.

Pennsylvania community college enrollments are projected to grow from their present level of 41,329 to 51,000 in 1980 before declining to 1974 levels in 1995. As phenomenal as this growth appears to be, the enrollment difference between public and independent higher education, projected on the basis of tuition and fee differential, is even more pronounced. If the present financial disparity continues, the independent and proprietary share of higher education enrollments may fall from the present combined 42.5 per cent to 34.3 per cent in 1995.

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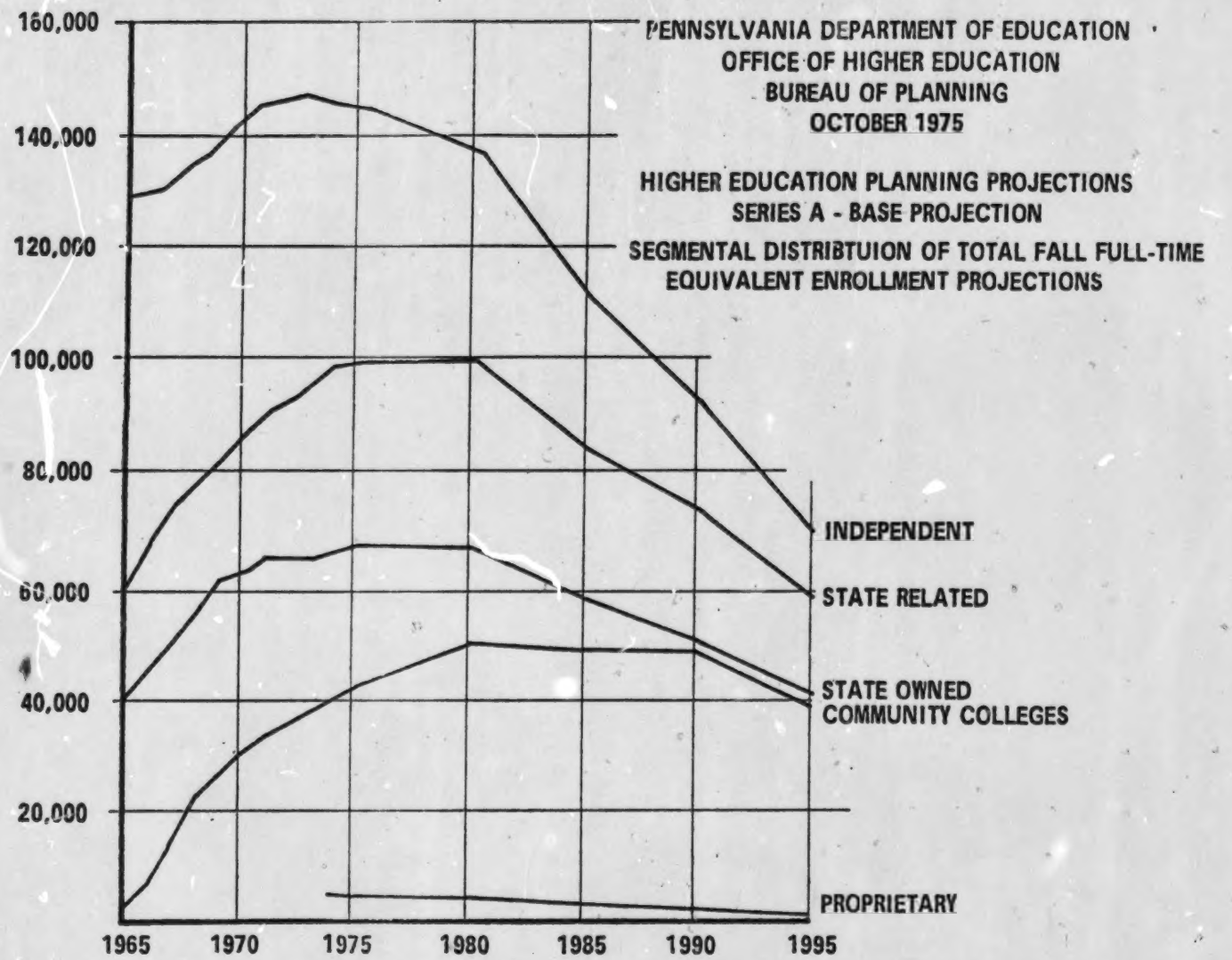
HIGHER EDUCATION PLANNING PROJECTIONS

SERIES A - BASE PROJECTION

SEGMENTAL DISTRIBUTION OF TOTAL FALL FULL-TIME
EQUIVALENT ENROLLMENT PROJECTIONS

	ACTUAL											
	1974	% OF TOTAL	1975	% OF TOTAL	1980	% OF TOTAL	1985	% OF TOTAL	1990	% OF TOTAL	1995	% OF TOTAL
STATE OWNED	67,342	18.5	68,000	18.6	68,000	18.6	59,000	18.7	52,000	18.8	42,000	19.2
COMMUNITY COLLEGE	41,329	11.4	43,000	11.8	51,000	14.0	50,000	16.2	50,000	18.2	41,000	18.8
STATE RELATED	100,350	27.6	101,000	27.6	101,000	27.5	86,000	27.3	76,000	27.3	60,000	27.7
INDEPENDENT	146,936	40.4	146,000	40.0	139,000	38.0	113,000	36.0	95,000	34.0	72,000	32.7
PROPRIETARY	7,493	2.1	7,000	2.0	7,000	1.9	6,000	1.8	5,000	1.7	4,000	1.6
TOTAL	363,450	100.0	365,000	100.0	366,000	100.0	314,000	100.0	278,000	100.0	219,000	100.0

NOTE: SYSTEM TOTALS ASSUME THAT THE FOUR YEAR BASE RATIO OF LIVE BIRTHS TO FULL-TIME EQUIVALENT STUDENTS WILL REMAIN CONSTANT. SEGMENTAL TOTALS ASSUME THAT COMMUNITY COLLEGE ENROLLMENT LEVELS WILL CONTINUE TO PARITY AND THAT THE TUITION AND FEE DISPARITY BETWEEN PUBLIC AND PRIVATE INSTITUTIONS WILL CONTINUE AT HISTORICAL LEVELS. PROJECTED FIGURES ROUNDED TO NEAREST 000's.


160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
1965
1970
1975
1980
1985
1990
1995
PENNSYLVANIA DEPARTMENT OF EDUCATION
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HIGHER EDUCATION PLANNING PROJECTIONS
SERIES A - BASE PROJECTION
SEGMENTAL DISTRIBTUION OF TOTAL FALL FULL-TIME
EQUIVALENT ENROLLMENT PROJECTIONS
INDEPENDENT
STATE RELATED
STATE OWNED
COMMUNITY COLLEGES
PROPRIETARY

SERIES B

Assumptions and Projections

PENNSYLVANIA DEPARTMENT OF EDUCATION
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OCTOBER 1975

PENNSYLVANIA HIGHER EDUCATION

PLANNING PROJECTION ASSUMPTIONS FOR TOTAL FALL FULL-TIME EQUIVALENT ENROLLMENTS

SERIES B

SYSTEM ASSUMPTIONS*

1. THAT THE PRESENT PERCENTAGE OF WHITE MALE HIGH SCHOOL GRADUATES ATTENDING INSTITUTIONS OF HIGHER EDUCATION WILL NOT INCREASE.

2. THAT THE STATE BOARD OF EDUCATION AND THE COMMONWEALTH WILL FOLLOW POLICIES LEADING TO TOTAL PARITY FOR WOMEN.

3. THAT THE STATE BOARD OF EDUCATION AND THE COMMONWEALTH WILL FOLLOW POLICIES LEADING TO TOTAL PARITY FOR BLACKS AND OTHER MINORITIES.

4. THAT GRADUATE AND FIRST PROFESSIONAL EDUCATION OPPORTUNITIES WILL CONTINUE TO GROW.

SEGMENTAL ASSUMPTIONS*

1. THAT COMMUNITY COLLEGE ENROLLMENTS WILL CONTINUE TO THE COMMITTEE ESTABLISHED MEASURE OF PARITY.

2. THAT SEGMENTAL DISTRIBUTION IS LARGELY A FUNCTION OF COST.

3. THAT THE HISTORICAL TUITION FEE DISPARITY BETWEEN THE PUBLIC AND INDEPENDENT INSTITUTIONS WILL CONTINUE AT CURRENT LEVELS.

*THESE ASSUMPTIONS ARE NOT SUBMITTED AS POLICY BUT FOR PLANNING PROJECTIONS.

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SERIES B - TABLE I

Table I and the accompanying graph show the enrollment numbers expected for each five-year period to 1995 if women achieved enrollment parity. The table shows the effect of raising the percentage of women from the present level of 42.2 per cent to 50.0 per cent of the higher education student enrollment by 1990 in equally spaced intervals. This 50.0 per cent level is then maintained in the 1995 projection shown in the table. In total, this means that an additional 44,292 women would have to be added by 1990. Even so, total enrollments would only reach 323,000 by 1990 and then drop to 265,000 by 1995 showing the effect of the falling birth rate on total enrollments. Both figures are significantly below the 1974 FTE enrollment of 363,450.

While a decided trend exists toward increasing female enrollment levels of the magnitude described in the Phase I Report, the committee has viewed parity for women as a goal rather than a prediction. Actually, since many women become homemakers early in life, it may not be realistic to expect complete parity with men. Also, even if they do, this may not result in an overall increase in college attendance, but rather the number of men may decline as the number of women increases. This decline in male attendance could be in response to the changing nature of the job market.

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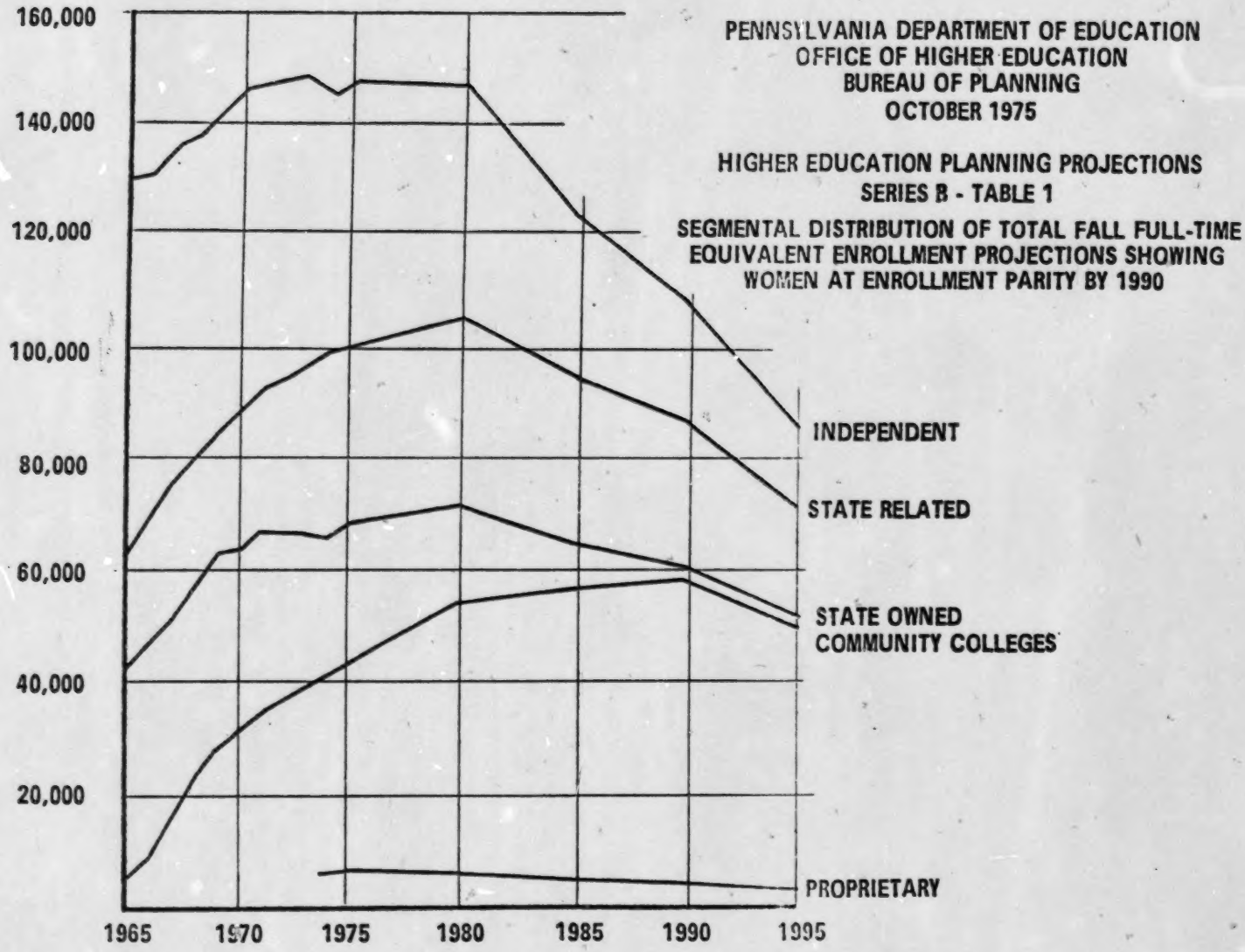
HIGHER EDUCATION PLANNING PROJECTIONS

SERIES B - TABLE 1

SEGMENTAL DISTRIBUTION OF TOTAL FALL FULL-TIME EQUIVALENT ENROLLMENT
PROJECTIONS SHOWING WOMEN AT ENROLLMENT PARITY BY 1990

	ACTUAL											
SEGMENTS	1974	% OF TOTAL	1975	% OF TOTAL	1980	% OF TOTAL	1985	% OF TOTAL	1990	% OF TOTAL	1995	% OF TOTAL
STATE OWNED	67,342	18.5	69,000	18.6	73,000	18.6	65,000	18.7	61,000	18.8	52,000	19.2
COMMUNITY COLL.	41,329	11.4	44,000	11.8	55,000	14.0	57,000	16.2	59,000	18.2	50,000	18.8
STATE RELATED	100,350	27.6	102,000	27.6	107,000	27.5	96,000	27.3	83,000	27.3	72,000	27.7
INDEPENDENT	146,936	40.4	149,000	40.0	148,000	38.0	126,000	36.0	110,000	34.0	87,000	32.7
PROPRIETARY	7,493	2.1	8,000	2.0	7,000	1.9	6,000	1.8	5,000	1.7	4,000	1.6
TOTAL	363,450	100.0	372,000	100.0	390,000	100.0	350,000	100.0	323,000	100.0	265,000	100.0

NOTE: SYSTEM TOTALS ASSUME THAT THE FOUR YEAR BASE RATIO OF LIVE BIRTHS TO FULL-TIME EQUIVALENT STUDENTS WILL REMAIN CONSTANT. SEGMENTAL TOTALS ASSUME THAT COMMUNITY COLLEGE ENROLLMENT LEVELS WILL CONTINUE TO PARITY AND THAT THE TUITION AND FEE DISPARITY BETWEEN PUBLIC AND PRIVATE INSTITUTIONS WILL CONTINUE AT HISTORICAL LEVELS. ALSO, SEGMENTAL TOTALS ASSUME THAT WOMEN WILL BE PROPORTIONATELY ATTRACTED TO THE SEGMENTS. PROJECTED FIGURES ROUNDED TO NEAREST 000's.



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HIGHER EDUCATION PLANNING PROJECTIONS
SERIES B - TABLE 1

SEGMENTAL DISTRIBUTION OF TOTAL FALL FULL-TIME EQUIVALENT ENROLLMENT PROJECTIONS SHOWING WOMEN AT ENROLLMENT PARITY BY 1990

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SERIES B - TABLE II

Table II and the accompanying graph show the effect of bringing minorities to enrollment parity by the target year, 1990. The mathematics are accomplished by increasing the minorities' share from their present 7.0 per cent to 9.6 per cent (their present share of the 18-21 age bracket in Pennsylvania) and adding that number to the base projection. The cumulative effect would add about 8,000 students. Parity is then maintained in the 1995 projection. All totals reflect the effect of the falling birth rate on enrollment.

There is some evidence to suggest that more Pennsylvania minority students are being attracted to out-of-state schools than out-of-state minority students are being attracted to Pennsylvania schools. If this is true, parity as a goal would push minority enrollments beyond their "fair" share of the market.

PENNSYLVANIA DEPARTMENT OF EDUCATION
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HIGHER EDUCATION PLANNING PROJECTIONS

SERIES B - TABLE II

SEGMENTAL DISTRIBUTION OF TOTAL FALL FULL-TIME EQUIVALENT ENROLLMENT
PROJECTIONS SHOWING MINORITIES AT ENROLLMENT PARITY BY 1990

	ACTUAL											
SEGMENTS	1974	% OF TOTAL	1975	% OF TOTAL	1980	% OF TOTAL	1985	% OF TOTAL	1990	% OF TOTAL	1995	% OF TOTAL
STATE OWNED	67,342	18.5	68,000	18.6	69,000	18.6	60,000	18.7	54,000	18.8	44,000	19.2
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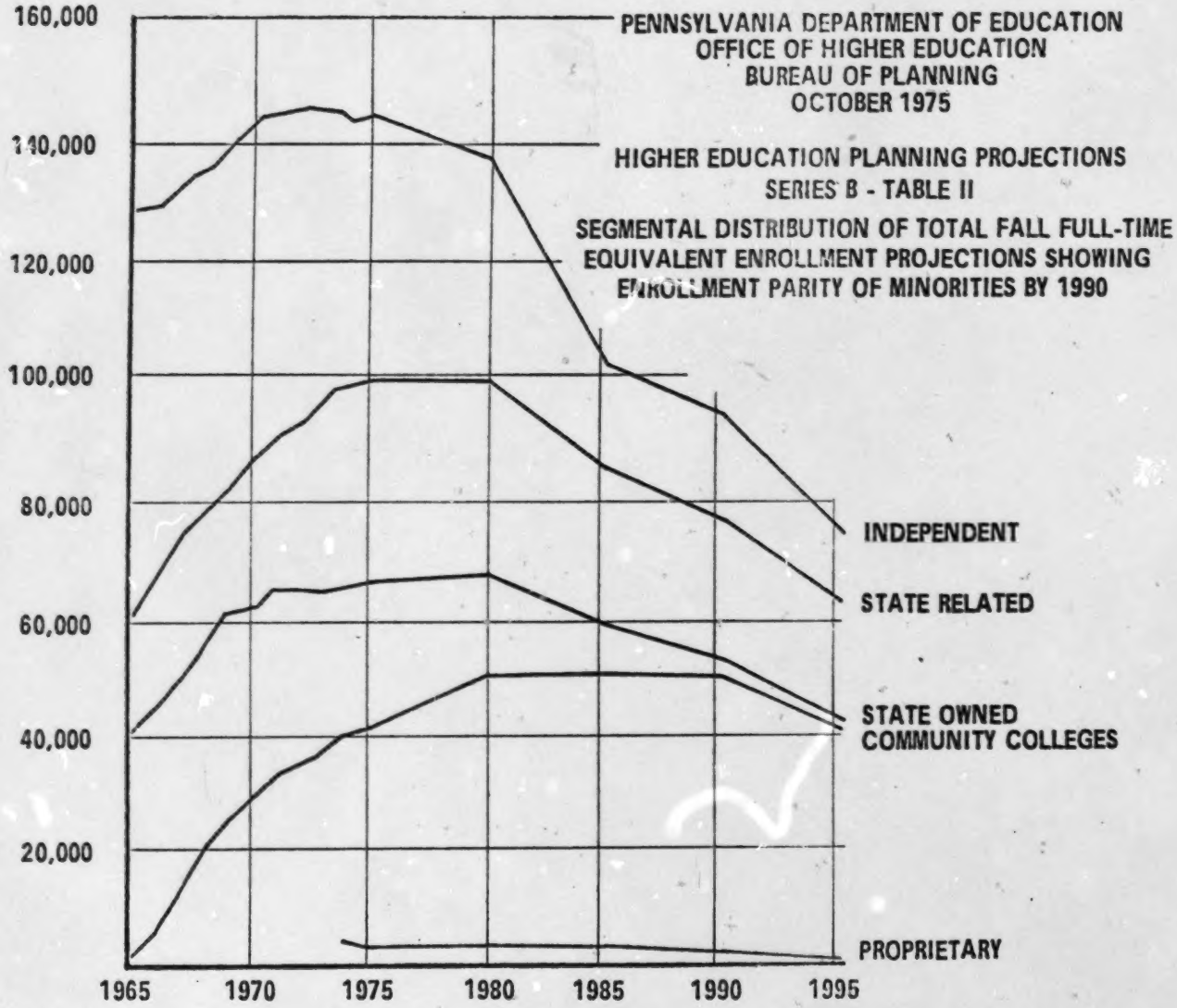
STATE RELATED	100,350	27.6	101,000	27.6	102,000	27.5	87,000	27.3	78,000	27.3	64,000	27.7
INDEPENDENT	146,936	40.4	147,000	40.0	140,000	38.0	115,000	36.0	97,000	34.0	76,000	32.7
PROPRIETARY	7,493	2.1	7,000	2.0	7,000	1.9	6,000	1.8	5,000	1.7	4,000	1.6
TOTAL	363,450	100.0	366,000	100.0	370,000	100.0	320,000	100.0	286,000	100.0	231,000	100.0

NOTE: SYSTEM TOTALS ASSUME THAT THE FOUR YEAR BASE RATIO OF LIVE BIRTHS TO FULL-TIME EQUIVALENT STUDENTS WILL REMAIN CONSTANT. SEGMENTAL TOTALS ASSUME THAT COMMUNITY COLLEGE ENROLLMENT LEVELS WILL CONTINUE TO PARITY AND THAT THE TUITION AND FEE DISPARITY BETWEEN PUBLIC AND PRIVATE INSTITUTIONS WILL CONTINUE AT HISTORICAL LEVELS. ALSO, SEGMENTAL TOTALS ASSUME THAT MINORITIES WILL BE PROPORTIONATELY ATTRACTED TO THE SEGMENTS. PROJECTED FIGURES ROUNDED TO NEAREST 000's.


PENNSYLVANIA DEPARTMENT OF EDUCATION
OFFICE OF HIGHER EDUCATION
BUREAU OF PLANNING
OCTOBER 1975
HIGHER EDUCATION PLANNING PROJECTIONS
SERIES B - TABLE II
SEGMENTAL DISTRIBUTION OF TOTAL FALL FULL-TIME
EQUIVALENT ENROLLMENT PROJECTIONS SHOWING
ENROLLMENT PARITY OF MINORITIES BY 1990
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
1965
1970
1975
1980
1985
1990
1995
INDEPENDENT
STATE RELATED
STATE OWNED
COMMUNITY COLLEGES
PROPRIETARY

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PENNSYLVANIA DEPARTMENT OF EDUCATION
OFFICE OF HIGHER EDUCATION
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OCTOBER 1975

SERIES B - TABLE III

The average Pennsylvania higher education graduate and first-professional enrollment increase from 1968 to 1972 was 4.9 per cent per year. At that rate, graduate and first-professional enrollments would double in about 14 years. Because of the anticipated decline in enrollments in the 1980s and the difficulty of Ph.d's now finding appropriate jobs, pressure will mount to limit growth. The assumption was made, therefore, that the rate of increase would drop until the present number is increased by a total of only 50 per cent (21,629) by the year 1990.

Table III and the accompanying graph show the effect on the base line projection of a 50 per cent increase in graduate and first-professional enrollments by 1990. This 50 per cent level of increase is then maintained for the 1995 projection.

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PENNSYLVANIA DEPARTMENT OF EDUCATION
OFFICE OF HIGHER EDUCATION
BUREAU OF PLANNING
OCTOBER 1975

HIGHER EDUCATION PLANNING PROJECTIONS

SERIES B - TABLE III

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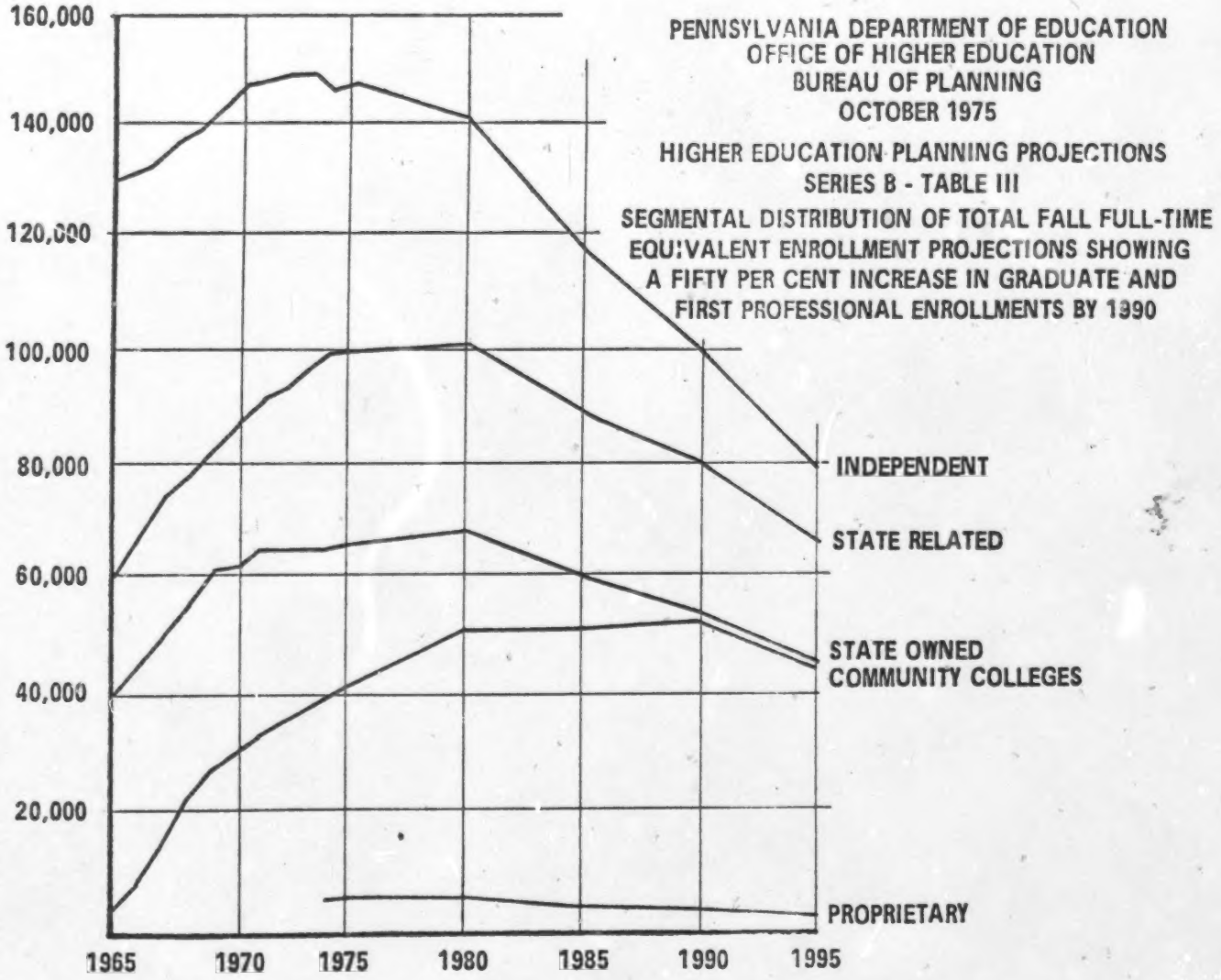
SEGMENTAL DISTRIBUTION OF TOTAL FALL FULL-TIME EQUIVALENT ENROLLMENT PROJECTIONS SHOWING A FIFTY PER CENT INCREASE IN GRADUATE AND FIRST PROFESSIONAL ENROLLMENTS BY 1990

	ACTUAL											
	1974	% OF TOTAL	1975	% OF TOTAL	1980	% OF TOTAL	1985	% OF TOTAL	1990	% OF TOTAL	1995	% OF TOTAL
STATE OWNED	67,342	18.5	68,000	18.7	69,000	18.5	60,000	18.2	54,000	18.0	44,000	18.3
COMMUNITY COLLEGE	41,329	11.4	43,000	11.7	51,000	13.6	51,000	15.5	50,000	16.9	41,000	17.0
STATE RELATED	100,350	27.6	102,000	27.6	104,000	27.8	92,000	27.7	84,000	27.9	69,000	28.6
INDEPENDENT	146,936	40.4	148,000	40.1	144,000	38.2	121,000	36.8	107,000	35.5	83,000	34.4
PROPRIETARY	7,493	2.1	7,000	1.9	7,000	1.9	6,000	1.8	5,000	1.7	4,000	1.7
TOTAL	363,450	100.0	368,000	100.0	375,000	100.0	330,000	100.0	300,000	100.0	241,000	100.0

NOTE: SYSTEM TOTALS ASSUME THAT THE FOUR YEAR BASE RATIO OF LIVE BIRTHS TO FULL-TIME EQUIVALENT STUDENTS WILL REMAIN CONSTANT. SEGMENTAL TOTALS ASSUME THAT COMMUNITY COLLEGE ENROLLMENT LEVELS WILL CONTINUE TO PARITY AND THAT THE TUITION AND FEE DISPARITY BETWEEN PUBLIC AND PRIVATE INSTITUTIONS WILL CONTINUE AT HISTORICAL LEVELS. PROJECTED FIGURES ROUNDED TO NEAREST 000's.



PENNSYLVANIA DEPARTMENT OF EDUCATION
OFFICE OF HIGHER EDUCATION
BUREAU OF PLANNING
OCTOBER 1975

HIGHER EDUCATION PLANNING PROJECTIONS
SERIES B - TABLE III

SEGMENTAL DISTRIBUTION OF TOTAL FALL FULL-TIME EQUIVALENT ENROLLMENT PROJECTIONS SHOWING A FIFTY PER CENT INCREASE IN GRADUATE AND FIRST PROFESSIONAL ENROLLMENTS BY 1990

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PENNSYLVANIA DEPARTMENT OF EDUCATION
OFFICE OF HIGHER EDUCATION
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OCTOBER 1975

SERIES B - TABLE IV

Table IV and the accompanying graph show the result of combining the enrollment increase of the three prior (Series B) tables on the base line projection. A peak of 393,000 is achieved in 1980, declining to 272,000 by 1995. After 1980, the effect of the falling birth rate becomes increasingly apparent, falling to 272,000 in 1995; a decrease of 91,450 from the 1974 enrollment of 363,450.

PENNSYLVANIA DEPARTMENT OF EDUCATION
OFFICE OF HIGHER EDUCATION
BUREAU OF PLANNING
OCTOBER 1975

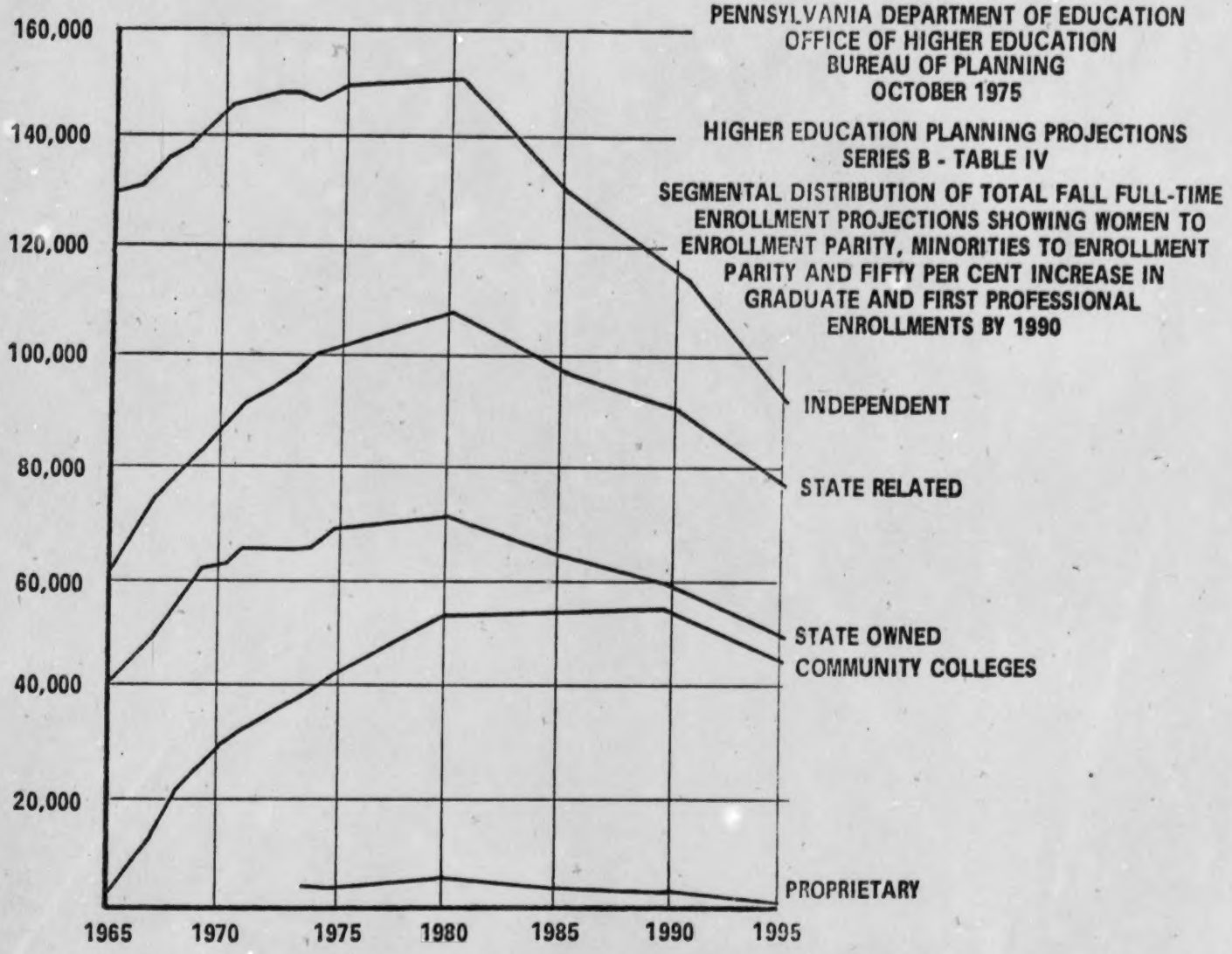
HIGHER EDUCATION PLANNING PROJECTIONS

SERIES B - TABLE IV

SEGMENTAL DISTRIBUTION OF TOTAL FALL FULL-TIME EQUIVALENT ENROLLMENT PROJECTIONS SHOWING WOMEN TO ENROLLMENT PARITY, MINORITIES TO ENROLLMENT PARITY AND FIFTY PER CENT INCREASE IN GRADUATE AND FIRST PROFESSIONAL ENROLLMENTS BY 1990

	ACTUAL											
	1974	% OF TOTAL	1975	% OF TOTAL	1980	% OF TOTAL	1985	% OF TOTAL	1990	% OF TOTAL	1995	% OF TOTAL
STATE OWNED	67,342	18.5	70,000	18.7	72,000	18.4	65,000	18.2	60,000	18.1	50,000	18.4
COMMUNITY COLLEGE	41,329	11.4	44,000	11.8	54,000	13.7	55,000	15.7	56,000	16.9	47,000	17.2
STATE RELATED	100,350	27.6	103,000	27.6	109,000	27.7	99,000	27.8	92,000	27.9	78,000	28.8
INDEPENDENT	146,936	40.4	149,000	40.0	150,000	38.2	130,000	36.7	117,000	35.4	93,000	34.3
PROPRIETARY	7,493	2.1	7,000	1.9	8,000	2.0	6,000	1.6	6,000	1.7	4,000	1.3
TOTAL	363,450	100.0	373,000	100.0	393,000	100.0	355,000	100.0	331,000	100.0	272,000	100.0

NOTE: SYSTEM TOTALS ASSUME THAT THE FOUR YEAR BASE RATIO OF LIVE BIRTHS TO FULL-TIME EQUIVALENT STUDENTS WILL REMAIN CONSTANT. SEGMENTAL TOTALS ASSUME THAT COMMUNITY COLLEGE ENROLLMENT LEVELS WILL CONTINUE TO PARITY AND THAT THE TUITION AND FEE DISPARITY BETWEEN PUBLIC AND PRIVATE INSTITUTIONS WILL CONTINUE AT HISTORICAL LEVELS. PROJECTED FIGURES ROUNDED TO NEAREST 000's.


PENNSYLVANIA DEPARTMENT OF EDUCATION
OFFICE OF HIGHER EDUCATION
BUREAU OF PLANNING
OCTOBER 1975
HIGHER EDUCATION PLANNING PROJECTIONS
SERIES B - TABLE IV
SEGMENTAL DISTRIBUTION OF TOTAL FALL FULL-TIME ENROLLMENT PROJECTIONS SHOWING WOMEN TO ENROLLMENT PARITY, MINORITIES TO ENROLLMENT PARITY AND FIFTY PER CENT INCREASE IN GRADUATE AND FIRST PROFESSIONAL ENROLLMENTS BY 1990
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
1965
1970
1975
1980
1985
1990
1995
INDEPENDENT
STATE RELATED
STATE OWNED
COMMUNITY COLLEGES
PROPRIETARY

29

SERIES C
Assumptions and Projections

PENNSYLVANIA DEPARTMENT OF EDUCATION
OFFICE OF HIGHER EDUCATION
BUREAU OF PLANNING
OCTOBER 1975

PENNSYLVANIA HIGHER EDUCATION

PLANNING PROJECTION ASSUMPTIONS FOR TOTAL FALL FULL-TIME EQUIVALENT ENROLLMENTS

SERIES C

SYSTEM ASSUMPTIONS*

1. THAT THE FOUR-YEAR BASE RATIO OF LIVE BIRTHS TO FTE STUDENTS WILL REMAIN CONSTANT.

2. THAT THE STATE BOARD OF EDUCATION WILL FOLLOW POLICIES LEADING TO A PROPORTIONATE REDUCTION IN TUITION AND FEES FOR ALL SEGMENTS.

SEGMENTAL ASSUMPTIONS*

1. THAT COMMUNITY COLLEGE ENROLLMENTS WILL CONTINUE TO THE COMMITTEE ESTABLISHED MEASURE OF PARITY.

2. THAT SEGMENTAL DISTRIBUTION IS LARGELY A FUNCTION OF COST.

3. THAT THE HISTORICAL TUITION FEE DISPARITY BETWEEN THE PUBLIC AND INDEPENDENT INSTITUTIONS WILL CONTINUE AT CURRENT LEVELS.

*THESE ASSUMPTIONS ARE NOT SUBMITTED AS POLICY BUT FOR PLANNING PROJECTIONS.

PENNSYLVANIA DEPARTMENT OF EDUCATION
OFFICE OF HIGHER EDUCATION
BUREAU OF PLANNING
OCTOBER 1975

SERIES C

The projection on the next table and the accompanying graph are based on a review of the systems in three selected states: Illinois, Michigan and Wisconsin. All of these states have generally lower tuition in the public sector than Pennsylvania.

Statistics show that FTE enrollments in institutions of higher education amounted to 3.25 per cent of the 1973 total population of Illinois; 3.39 per cent of the population of Michigan; 3.85 per cent of the population of Wisconsin, and 3.0 per cent of the population of Pennsylvania.

The assumption was made that by lowering Pennsylvania tuition in equally spaced increments between 1975 and 1990, we could increase Pennsylvania's present percentage enrollment level of 3.0 per cent of total population to the percentage enrollment level attained by the selected states of Illinois, Michigan and Wisconsin. This level of participation is then maintained for the 1995 projection.

The table and graph show the potential effect of combining the larger student participation rates of Illinois, Michigan and Wisconsin and calculating the anticipated effect on Pennsylvania's FTE enrollment. The results show an increase of 387,000 FTE's in 1980, followed by a decrease to 260,000 in 1995.

Systemwide generalized tuition reduction would have the advantage of attracting larger numbers of all kinds of students: male and female, minority and majority, graduates and undergraduates. Combined with other strategies, including an increase in the percentage of the older age students, losses could be minimized.

PENNSYLVANIA DEPARTMENT OF EDUCATION
OFFICE OF HIGHER EDUCATION
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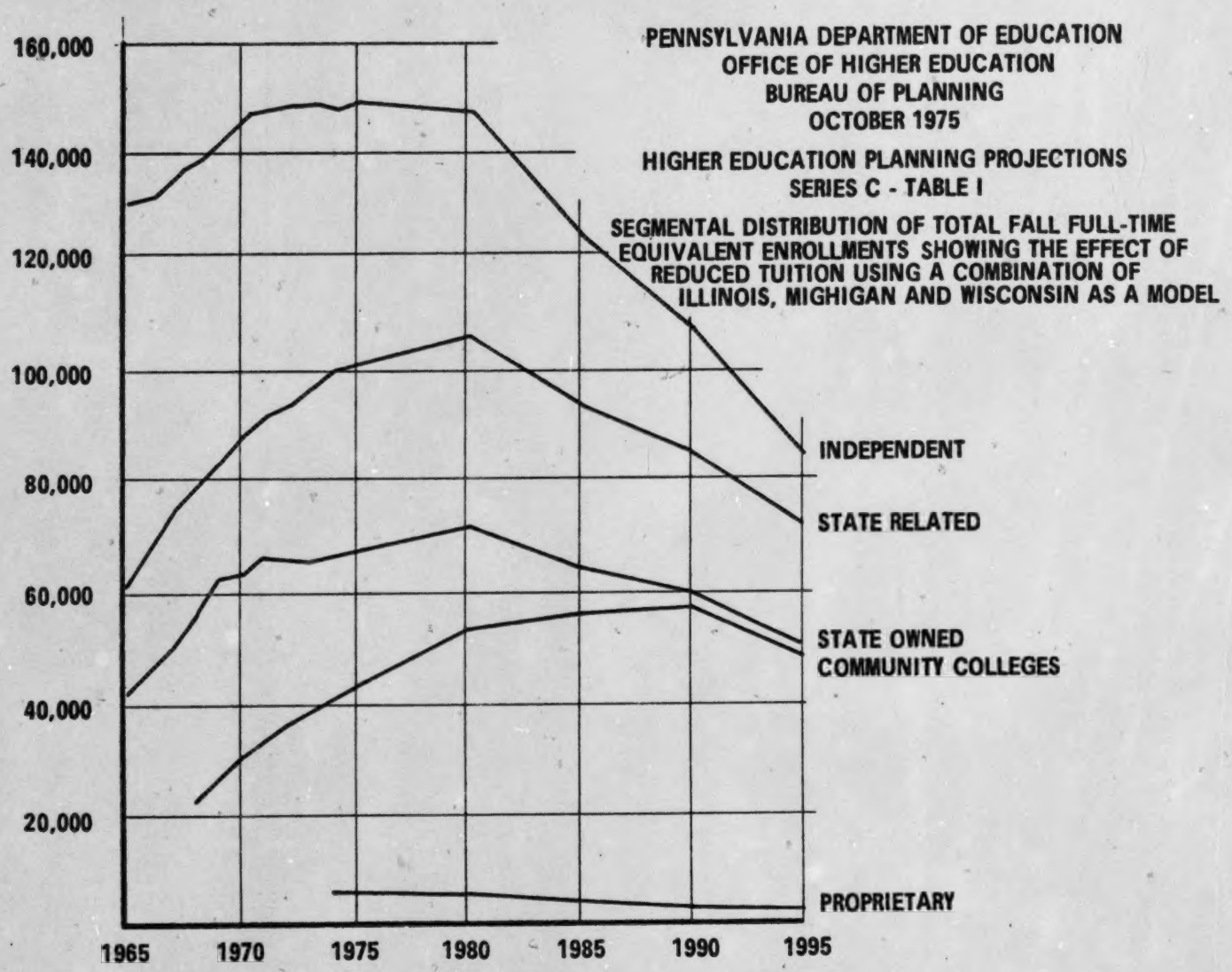
HIGHER EDUCATION PLANNING PROJECTIONS

SERIES C

SEGMENTAL DISTRIBUTION OF TOTAL FALL FULL-TIME EQUIVALENT ENROLLMENTS
SHOWING THE EFFECT OF REDUCED TUITION USING A COMBINATION OF
ILLINOIS, MICHIGAN AND WISCONSIN AS A MODEL

	ACTUAL											
SEGMENTS	1974	% OF TOTAL	1975	% OF TOTAL	1980	% OF TOTAL	1985	% OF TOTAL	1990	% OF TOTAL	1995	% OF TOTAL
STATE OWNED	67,342	18.5	69,000	18.6	72,000	18.6	65,000	18.7	60,000	18.8	50,000	19.2
COMMUNITY COLL.	41,329	11.4	44,000	11.8	54,000	14.0	56,000	16.2	58,000	18.2	49,000	18.8
STATE RELATED	100,350	27.6	102,000	27.6	107,000	27.5	94,000	27.3	86,000	27.3	72,000	27.7
INDEPENDENT	146,936	40.4	149,000	40.0	147,000	38.0	124,000	36.0	108,000	34.0	85,000	32.7
PROPRIETARY	7,493	2.1	7,000	2.0	7,000	1.9	6,000	1.8	5,000	1.7	4,000	1.6
TOTAL	363,450	100.0	371,000	100.0	387,000	100.0	345,000	100.0	317,000	100.0	260,000	100.0

NOTE: SYSTEM TOTALS ASSUME THAT THE FOUR YEAR BASE RATIO OF LIVE BIRTHS TO FULL-TIME EQUIVALENT STUDENTS WILL REMAIN CONSTANT. SEGMENTAL TOTALS ASSUME THAT COMMUNITY COLLEGE ENROLLMENT LEVELS WILL CONTINUE TO PARITY AND THAT THE TUITION AND FEE DISPARITY BETWEEN PUBLIC AND PRIVATE INSTITUTIONS WILL CONTINUE AT HISTORICAL LEVELS. PROJECTED FIGURES ROUNDED TO NEAREST 000's.


PENNSYLVANIA DEPARTMENT OF EDUCATION
OFFICE OF HIGHER EDUCATION
BUREAU OF PLANNING
OCTOBER 1975
HIGHER EDUCATION PLANNING PROJECTIONS
SERIES C - TABLE I
SEGMENTAL DISTRIBUTION OF TOTAL FALL FULL-TIME EQUIVALENT ENROLLMENTS SHOWING THE EFFECT OF REDUCED TUITION USING A COMBINATION OF ILLINOIS, MIGHIGAN AND WISCONSIN AS A MODEL
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
1965
1970
1975
1980
1985
1990
1995
INDEPENDENT
STATE RELATED
STATE OWNED
COMMUNITY COLLEGES
PROPRIETARY

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APPENDIX A

The computer printout sample shown on pages 31 to 33 is a first approximation of the committee's attempt to assess the effect of (1) age specific enrollments, and (2) the so-called adult/continuing education market. Each of the model's components has been assigned to a discreet cell which is separately aggregated for the category. Preliminary analysis indicates that the model is likely to generate somewhat higher enrollments as the participation rate of the various age levels is cohorted through time.

The noncredit (N-CDT) category has been and continues to be especially troublesome. A great deal more work is needed in this area.

PROJECTED HIGHER EDUCATION ENROLLMENTS (THOUSANDS)

DATE: 05/20/75

	1975						1980					
	OCCUP	BACC	GRAD	UNSP	N-DGT	ALL	OCCUP	BACC	GRAD	UNSP	N-DGT	ALL
1. FULL-TIME	32	267	22	4	0	325	32	265	25	4	0	326
2. MALE	20	152	15	2	0	189	20	149	16	2	0	187
3. WHITE	19	141	13	2	0	175	19	139	14	2	0	174
4. MINORITY	1	11	2	0	0	14	1	10	2	0	0	13
5. FEMALE	12	115	7	2	0	136	12	116	9	2	0	139
6. WHITE	11	107	7	2	0	127	11	108	8	2	0	129
7. MINORITY	1	8	0	0	0	9	1	8	1	0	0	10
8. PART-TIME	14	50	33	40	149	286	14	53	36	44	153	300
9. MALE	9	27	18	18	83	155	9	29	20	20	85	163
10. WHITE	8	25	17	17	77	144	8	27	19	19	79	152
11. MINORITY	1	2	1	1	6	11	1	2	1	1	6	11
12. FEMALE	5	23	15	22	66	131	5	24	16	24	68	137
13. WHITE	5	21	14	20	61	121	5	22	15	22	63	127
14. MINORITY	0	2	1	2	5	10	0	2	1	2	5	10
15. TOTAL MALE	29	179	33	20	83	344	29	178	36	22	85	350
16. TOTAL FEMALE	17	138	22	24	66	267	17	140	25	26	68	276
17. TOTAL WHITE	43	294	51	41	138	567	43	298	56	45	142	582
18. TOTAL MINORITY	3	23	4	3	11	44	3	22	5	3	11	44
19. TOTAL HEAD COUNT	46	317	55	44	149	611	46	318	61	48	153	626
20. FTE	37	284	33	17	50	421	37	283	37	19	51	427

PROJECTED HIGHER EDUCATION ENROLLMENTS (THOUSANDS)

DATE: 05/20/75

	1985						1990					
	CCCUP	BACC	GRAD	UNSP	N-CDT	ALL	CCCUP	BACC	GRAD	UNSP	N-CDT	ALL
1. FULL-TIME	30	247	25	3	0	305	26	207	23	3	0	259
2. MALE	19	142	16	2	0	179	16	116	15	2	0	149
3. WHITE	18	132	14	2	0	166	15	108	13	2	0	138
4. MINORITY	1	10	2	0	0	13	1	8	2	0	0	11
5. FEMALE	11	105	9	1	0	126	10	91	8	1	0	110
6. WHITE	10	98	8	1	0	117	9	85	7	1	0	102
7. MINORITY	1	7	1	0	0	9	1	6	1	0	0	8
8. PART-TIME	14	53	38	44	158	307	14	50	36	41	155	296
9. MALE	9	29	21	20	89	168	9	27	20	19	87	162
10. WHITE	8	27	20	19	82	156	8	25	19	18	81	151
11. MINORITY	1	2	1	1	7	12	1	2	1	1	6	11
12. FEMALE	5	24	17	24	69	139	5	23	16	22	68	134
13. WHITE	5	22	16	22	64	129	5	21	15	20	63	124
14. MINORITY	0	2	1	2	5	10	0	2	1	2	5	10
15. TOTAL MALE	28	171	37	22	89	347	25	143	35	21	87	311
16. TOTAL FEMALE	16	129	26	25	69	265	15	114	24	23	68	244
17. TOTAL WHITE	41	279	58	44	146	568	37	239	54	41	144	515
18. TOTAL MINORITY	3	21	5	3	12	44	3	18	5	3	11	40
19. TOTAL HEAD COUNT	44	300	63	47	158	612	40	257	59	44	155	555
20. FTE	35	285	38	18	53	409	31	224	35	17	52	359

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PROJECTED HIGHER EDUCATION ENROLLMENTS (THOUSANDS)

DATE: 05/20/75

1995

	OCCUP	PACC	GRAD	UNSP	N-CCT	ALL
1. FULL-TIME	23	185	19	3	0	230
2. MALE	14	103	13	2	0	132
3. WHITE	13	96	12	2	0	123
4. MINORITY	1	7	1	0	0	9
5. FEMALE	9	82	6	1	0	98
6. WHITE	8	76	6	1	0	91
7. MINORITY	1	6	0	0	0	7
8. PART-TIME	12	43	32	35	147	269
9. MALE	8	24	18	16	83	149
10. WHITE	7	22	17	15	77	138
11. MINORITY	1	2	1	1	6	11
12. FEMALE	4	19	14	19	64	120
13. WHITE	4	18	13	18	60	113
14. MINORITY	0	1	1	1	4	7
15. TOTAL MALE	22	127	31	18	83	281
16. TOTAL FEMALE	13	101	20	20	64	218
17. TOTAL WHITE	22	212	48	36	137	465
18. TOTAL MINORITY	3	16	3	2	10	34
19. TOTAL HEAD COUNT	35	228	51	38	147	499
20. FTE	27	195	30	15	49	320

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APPENDIX B

The following alternate projection matrix includes all of the categories shown in Appendix A, but adds a segmental distribution. The occupational or associate degree credit, baccalaureate, graduate, unspecified and noncredit categories have been transferred to the vertical axis. Substituted on the horizontal axis are the five principal segments of higher education. The model shown has the capability of refining and aggregating the projections presented on the preceding pages to a degree not practical with paper and pencil.

ALTERNATE POSTSECONDARY EDUCATION ENROLLMENT PROJECTION MATRIX

	State Owned	Community Colleges	State Related	Independent	Proprietary	Total
Associate Degree Credit/Fall*						
1. Full-Time						
2. Male						
3. White						
4. Minority						
5. Female						
6. White						
7. Minority						
8. Part-Time						
9. Male						
10. White						
11. Minority						
12. Female						
13. White						
14. Minority						
15. Total Male						
16. Total Female						
17. Total White						
18. Total Minority						
19. Total Headcount						
20. FTE						
Non Credit/Fall						
1. Total Male						
2. Total Female						
3. Total White						
4. Total Minority						
5. Total Headcount						

Note: The Associate Degree Column above should be followed by the same categorical array under "Bacc Degree Credit," "Graduate Degree Credit" and "Unclassified Degree Credit."

APPENDIX C

The following graph shows the range between the highest and lowest projection in the report. It is abundantly evident that even if we could achieve all of the stated goals and implied trend benefits shown in the preceding tables, we would still not offset the effects of the continuously declining birth rate over the last 17 years. That birth rate has been so devastating that no strategy is likely to be effective in reversing the trend.

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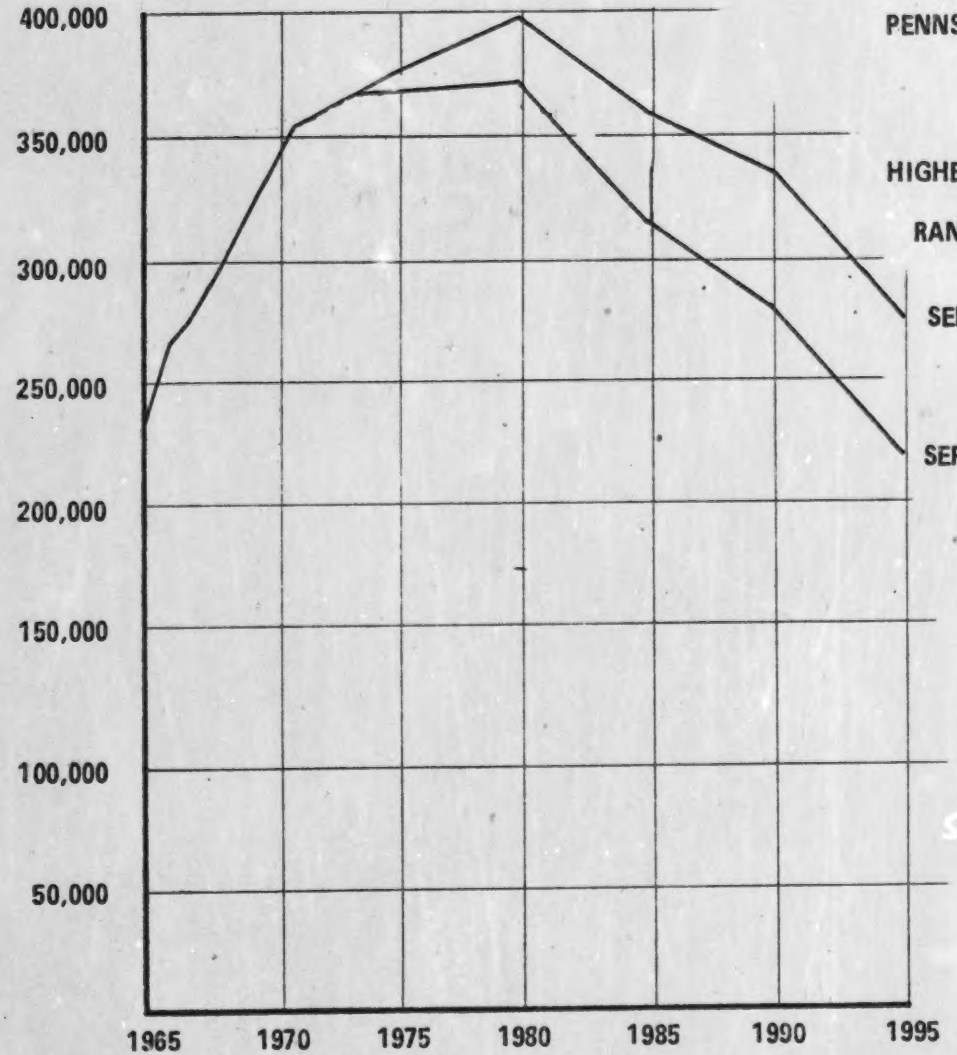

PENNSYLVANIA DEPARTMENT OF EDUCATION
OFFICE OF HIGHER EDUCATION
BUREAU OF PLANNING
OCTOBER 1975

HIGHER EDUCATION PLANNING PROJECTIONS
TABLE B
RANGE OF PROJECTIONS - TOTAL SYSTEM

SERIES B - TABLE IV PROJECTIONS

SERIES A - BASE PROJECTIONS

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